

December 10, 2012

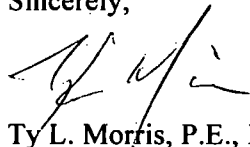
Mr. Jason Gunter  
Remedial Project Manager  
U.S. Environmental Protection Agency  
Region 7 - Superfund Branch  
901 North 5<sup>th</sup> Street  
Kansas City, KS 66101

**Re: National Mine Tailings Site Progress Report**

Dear Mr. Gunter:

As required by Article VI, Section 51 of the Unilateral Administrative Order (Docket No. CERCLA-07-2006-0231) for the referenced project and on behalf of The Doe Run Company and NL Industries, Inc., the progress report for the period August 1, 2012 through August 31, 2012 is enclosed. If you have any questions or comments, please call me at 573-638-5020 or Mark Nations at 573-518-0600.

Sincerely,



Ty L. Morris, P.E., R.G.  
Vice President

TLM/jms  
Enclosure

c: Mark Nations – TDRC  
Matt Wohl – TDRC (electronic only)  
Kevin Lombardozzi – NL Industries, Inc.  
John Kennedy – City of Park Hills  
Norm Lucas – Park Hills – Leadington Chamber of Commerce  
Kathy Rangen – MDNR  
Tim Skoglund – Barr Engineering

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Superfund

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**National Mine Tailings Site**  
Park Hills, Missouri  
**Removal Action - Monthly Progress Report**  
Period: August 1, 2012 – August 31, 2012

**1. Actions Performed and Problems Encountered This Period:**

- a. Work at the site continued on the West Area. This work focused on the task of rocking the area that had been surveyed. This included placing a 6-inch layer of crushed rock filter on the graded surface and a 12-inch layer of slope riprap on top of the crushed rock filter. As of the end of the period, work on this task continued.
- b. Work at the site began on the task of repairing Commerce Drive. This work focused on the task of removing the asphalt so that the road could be repaved by the City of Park Hills. As of the end of the period, the existing asphalt had been removed. As it was not possible to remove this material without removing the chat and tailings below the asphalt, this material was placed in the disposal area located on the southwest side of the West Area. It is anticipated that the City of Park Hills will proceed with paving activities in the near future.
- c. Work at the site also continued on the Mine Shaft Area. This work focused on the investigation of the area to determine what work needs to be completed. As of the end of the period, it was determined that due to the lack of observable mine waste on the site and the extensive nature of vegetative cover no additional removal activities were needed. However, the inspection did note that the concrete structure believed to be mine shaft needs some repair. These findings will be discussed with the EPA project coordinator during a visit next period.
- d. Work at the site continued on the task of meeting with the landowners who may be affected by the removal action activities. This included meeting with landowners who signed an access agreement prior to April 1, 2008, which needed to be amended, as well as landowners who have not signed agreements. As of the end of the period, the following had been accomplished:

Landowners that own property within the site boundary

Total number of landowners = 22

Landowners who signed an access agreement prior to 04/01/08 = 18

Landowners who signed an access agreement after 04/01/08 = 1

Landowners who are reviewing the access agreement = 3

Landowners who have refused to sign the access agreement = 0

Landowners who still need to be met with concerning the access agreement = 0

Total number of landowners who need to sign the amendment letter = 18

Landowners who have signed the amendment letter = 16

Landowners who are reviewing the amendment letter = 1

Landowners who refused to sign the amendment letter = 0

Landowners who still need to be met with concerning the amendment letter = 1

(Changes in the total number of landowners and the total number of landowners who need to sign the amendment letter are as a result of sales that occurred since the meetings with the landowners began.)

Landowners that own property immediately adjacent to the site boundary

Total number of landowners = 27

Landowners who signed an access agreement prior to 04/01/08 = 11

Landowners who signed an access agreement after 04/01/08 = 6

Landowners who are reviewing the access agreement = 4

Landowners who have refused to sign the access agreement = 3

Landowners who still need to be met with concerning the access agreement = 3

Total number of landowners who need to sign the amendment letter = 11

Landowners who have signed the amendment letter = 11

Landowners who are reviewing the amendment letter = 0

Landowners who refused to sign the amendment letter = 0

Landowners who still need to be met with concerning the amendment letter = 0

(It is not anticipated that it will be a challenge to work around the property owned by the three landowners that refused to sign the access agreement based on location of the property in relationship to the work that needs to be completed. Changes in the total number of landowners and the total number of landowners who need to sign the amendment letter are as a result of sales that occurred since the meetings with the landowners began.)

## **2. Analytical Data and Results Received This Period:**

- a. During this period, water samples were collected at the sampling locations identified in Appendix C of the Removal Action Work Plan where water was present. Copies of the analytical results from the last sampling event are included with this progress report.
- b. During this period, the Ambient Air Monitoring Reports for June 2012 and Second Quarter 2012 were received. Any issues identified in these reports are discussed below. A copy of these documents has been sent to your attention.

The June 2012 Ambient Air Monitoring Report noted the following:

- The action levels for lead and dust were not exceeded.
- No samples were taken with the Big River #4 QA TSP monitor on 06/07/12 due to mechanical failure. Upon discovery, the issue was corrected.
- No TSP monitors samples were taken on 06/28/12 due to the remediation crew being in training.

The Second Quarter 2012 Ambient Air Monitoring Report noted the following:

- The action levels for lead and dust were not exceeded.
- No samples were taken with the Big River #4 PM<sub>10</sub> monitor on 04/21/12 due to mechanical failure. Upon discovery, the issue was corrected.
- No samples were taken with the National #2 (Soccer Field) TSP monitor on 04/24/12 due to mechanical failure. Upon discovery, the issue was corrected.
- There was a QA blank filter associated with the National #1 (Ozark Insulation) TSP and PM<sub>10</sub> monitors on 04/30/12.
- No samples were taken with the TSP monitors on 05/28/12 due to the holiday.
- No samples were taken with the Big River #4 QA TSP monitor on 06/07/12 due to mechanical failure. Upon discovery, the issue was corrected.
- No TSP monitors samples were taken on 06/28/12 due to the remediation crew being in training.

## **3. Developments Anticipated and Work Scheduled for Next Period:**

- a. Complete work in the Mine Shaft Area.
- b. Finish rocking the West Area.
- c. Complete monthly water sampling activities as described in the Removal Action Work Plan.
- d. Complete air monitoring activities as described in the Removal Action Work Plan.
- e. Begin demobilization activities.

## **4. Changes in Personnel:**

- a. None.

## **5. Issues or Problems Arising This Period:**

- a. None.

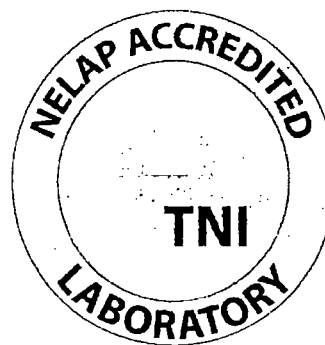
## **6. Resolution of Issues or Problems Arising This Period:**

- a. None.

**End of Monthly Progress Report**

September 04, 2012

Allison Olds  
Barr Engineering Company  
1001 Diamond Ridge  
Suite 1100  
Jefferson City, MO 65109  
TEL: (573) 638-5007  
FAX: (573) 638-5001



**RE:** National MTS-25/86-0003

**WorkOrder:** 12080803

Dear Allison Olds:

TEKLAB, INC received 1 sample on 8/17/2012 11:47:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,



Michael L. Austin  
Project Manager  
(618)344-1004 ex 16  
MAustin@teklabinc.com

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**Client:** Barr Engineering Company

**Work Order:** 12080803

**Client Project:** National MTS-25/86-0003

**Report Date:** 04-Sep-12

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This reporting package includes the following:

|                         |          |
|-------------------------|----------|
| Cover Letter            | 1        |
| Report Contents         | 2        |
| Definitions             | 3        |
| Case Narrative          | 4        |
| Laboratory Results      | 5        |
| Sample Summary          | 6        |
| Dates Report            | 7        |
| Quality Control Results | 8        |
| Receiving Check List    | 13       |
| Chain of Custody        | Appended |

**Client:** Barr Engineering Company**Work Order:** 12080803**Client Project:** National MTS-25/86-0003**Report Date:** 04-Sep-12**Abbr Definition**

- CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
- DF Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
- DNI Did not ignite
- DUP Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
- ICV Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
- IDPH IL Dept. of Public Health
- LCS Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
- LCS D Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MB Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
- MDL Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.
- MS Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
- MSD Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MW Molecular weight
- ND Not Detected at the Reporting Limit
- NELAP NELAP Accredited
- PQL Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
- RL The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
- RPD Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
- SPK The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
- Surr Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
- TNTC Too numerous to count ( > 200 CFU )

**Qualifiers**

- |  |   |
|--|---|
| # - Unknown hydrocarbon                                | B - Analyte detected in associated Method Blank |
| E - Value above quantitation range                     | H - Holding times exceeded                      |
| M - Manual Integration used to determine area response | ND - Not Detected at the Reporting Limit        |
| R - RPD outside accepted recovery limits               | S - Spike Recovery outside recovery limits      |
| X - Value exceeds Maximum Contaminant Level            |   |

**Client:** Barr Engineering Company**Work Order:** 12080803**Client Project:** National MTS-25/86-0003**Report Date:** 04-Sep-12**Cooler Receipt Temp:** 3.6 °C

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**Locations and Accreditations**

| <u>Collinsville</u> |   | <u>Springfield</u> |   | <u>Kansas City</u> |                                      |
|---------------------|---|--------------------|---|--------------------|--------------------------------------|
| Address             | 5445 Horseshoe Lake Road<br>Collinsville, IL 62234-7425 | Address            | 3920 Pintail Dr<br>Springfield, IL 62711-9415 | Address            | 8421 Nieman Road<br>Lenexa, KS 66214 |
| Phone               | (618) 344-1004  | Phone              | (217) 698-1004                                | Phone              | (913) 541-1998                       |
| Fax                 | (618) 344-1005  | Fax                | (217) 698-1005                                | Fax                | (913) 541-1998                       |
| Email               | jhriley@teklabinc.com                                   | Email              | kmcclain@teklabinc.com                        | Email              | dthompson@teklabinc.com              |

| <u>State</u> | <u>Dept</u> | <u>Cert #</u>   | <u>NELAP</u> | <u>Exp Date</u> | <u>Lab</u>   |
|--------------|-------------|-----------------|--------------|-----------------|--------------|
| Illinois     | IEPA        | 100226          | NELAP        | 1/31/2013       | Collinsville |
| Kansas       | KDHE        | E-10374         | NELAP        | 1/31/2013       | Collinsville |
| Louisiana    | LDEQ        | 166493          | NELAP        | 6/30/2013       | Collinsville |
| Louisiana    | LDEQ        | 166578          | NELAP        | 6/30/2013       | Springfield  |
| Texas        | TCEQ        | T104704515-12-1 | NELAP        | 7/31/2013       | Collinsville |
| Arkansas     | ADEQ        | 88-0966         |              | 3/14/2013       | Collinsville |
| Illinois     | IDPH        | 17584           |              | 4/30/2013       | Collinsville |
| Kentucky     | UST         | 0073            |              | 5/26/2013       | Collinsville |
| Missouri     | MDNR        | 00930           |              | 4/13/2013       | Collinsville |
| Oklahoma     | ODEQ        | 9978            |              | 8/31/2013       | Collinsville |

Client: Barr Engineering Company

Work Order: 12080803

Client Project: National MTS-25/86-0003

Report Date: 04-Sep-12

Lab ID: 12080803-001

Client Sample ID: Nat-East

Matrix: AQUEOUS

Collection Date: 08/16/2012 12:20

| Analyses   | Certification | RL   | Qual | Result | Units | DF | Date Analyzed    | Batch   |
|--|---------------|------|------|--------|-------|----|------------------|---------|
| <b>EPA 600 375.2 REV 2.0 1993 (TOTAL)</b>  |               |      |      |        |       |    |                  |         |
| Sulfate  | NELAP         | 50   | S    | 225    | mg/L  | 5  | 08/21/2012 12:14 | R167173 |
| <i>MS and/or MSD did not recover within control limits due to matrix interference.</i> |               |      |      |        |       |    |                  |         |
| <b>STANDARD METHOD 4500-H B, LABORATORY ANALYZED</b>                                   |               |      |      |        |       |    |                  |         |
| Lab pH   |               | 1.00 |      | 8.00   |       | 1  | 08/17/2012 14:45 | R167049 |
| <b>STANDARD METHODS 2340 C</b>   |               |      |      |        |       |    |                  |         |
| Hardness, as ( CaCO <sub>3</sub> )   |               | 5    |      | 480    | mg/L  | 1  | 08/17/2012 13:45 | R167060 |
| <b>STANDARD METHODS 2540 C (TOTAL)</b>   |               |      |      |        |       |    |                  |         |
| Total Dissolved Solids   |               | 20   |      | 550    | mg/L  | 1  | 08/17/2012 13:11 | R167104 |
| <b>STANDARD METHODS 2540 D</b>   |               |      |      |        |       |    |                  |         |
| Total Suspended Solids   |               | 6    |      | < 6    | mg/L  | 1  | 08/20/2012 12:50 | R167077 |
| <b>STANDARD METHODS 2540 F</b>   |               |      |      |        |       |    |                  |         |
| Solids, Settleable   |               | 0.1  |      | < 0.1  | ml/L  | 1  | 08/17/2012 12:57 | R167009 |
| <b>STANDARD METHODS 5310 C, ORGANIC CARBON</b>   |               |      |      |        |       |    |                  |         |
| Total Organic Carbon (TOC)   |               | 1.0  |      | < 1.0  | mg/L  | 1  | 08/20/2012 23:07 | R167121 |
| <b>EPA 600 4.1.1, 200.7R4.4, METALS BY ICP (DISSOLVED)</b>                             |               |      |      |        |       |    |                  |         |
| Cadmium  | NELAP         | 2.00 |      | < 2.00 | µg/L  | 1  | 09/04/2012 10:05 | 80707   |
| Zinc   | NELAP         | 10.0 |      | 24.4   | µg/L  | 1  | 09/04/2012 10:05 | 80707   |
| <b>EPA 600 4.1.4, 200.7R4.4, METALS BY ICP (TOTAL)</b>                                 |               |      |      |        |       |    |                  |         |
| Cadmium  | NELAP         | 2.00 |      | < 2.00 | µg/L  | 1  | 09/01/2012 22:59 | 80712   |
| Zinc   | NELAP         | 10.0 |      | 26.1   | µg/L  | 1  | 09/01/2012 22:59 | 80712   |
| <b>STANDARD METHODS 3030 E, 3113 B, METALS BY GFAA</b>                                 |               |      |      |        |       |    |                  |         |
| Lead   |               | 2.00 | X    | 7.41   | µg/L  | 1  | 08/20/2012 13:24 | 80718   |
| <b>STANDARD METHODS 3030 B, 3113 B, METALS BY GFAA (DISSOLVED)</b>                     |               |      |      |        |       |    |                  |         |
| Lead   |               | 4.00 | X    | 5.78   | µg/L  | 2  | 08/21/2012 9:35  | 80706   |





## Sample Summary

<http://www.teklabinc.com/>

**Client:** Barr Engineering Company

**Work Order:** 12080803

**Client Project:** National MTS-25/86-0003

**Report Date:** 04-Sep-12

| Lab Sample ID | Client Sample ID | Matrix  | Fractions | Collection Date  |
|---------------|------------------|---------|-----------|------------------|
| 12080803-001  | Nat-East         | Aqueous | 5         | 08/16/2012 12:20 |

## Dates Report

<http://www.teklabinc.com/>
**Client:** Barr Engineering Company

**Work Order:** 12080803

**Client Project:** National MTS-25/86-0003

**Report Date:** 04-Sep-12

| Sample ID     | Client Sample ID  | Collection Date  | Received Date    | Prep Date/Time   | Analysis Date/Time |
|---------------|---|------------------|------------------|------------------|--------------------|
| Test Name     |   |                  |                  |                  |                    |
| 12080803-001A | Nat-East  | 08/16/2012 12:20 | 08/17/2012 11:47 |                  |                    |
|               | Standard Methods 2540 F                                     |                  |                  |                  | 08/17/2012 12:57   |
| 12080803-001B | Nat-East  | 08/16/2012 12:20 | 08/17/2012 11:47 |                  |                    |
|               | EPA 600 375.2 Rev 2.0 1993 (Total)                          |                  |                  |                  | 08/21/2012 12:14   |
|               | Standard Method 4500-H B, Laboratory Analyzed               |                  |                  |                  | 08/17/2012 14:45   |
|               | Standard Methods 2340 C                                     |                  |                  |                  | 08/17/2012 13:45   |
|               | Standard Methods 2540 C (Total)                             |                  |                  |                  | 08/17/2012 13:11   |
|               | Standard Methods 2540 D                                     |                  |                  |                  | 08/20/2012 12:50   |
| 12080803-001C | Nat-East  | 08/16/2012 12:20 | 08/17/2012 11:47 |                  |                    |
|               | EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total)             |                  |                  | 08/17/2012 15:36 | 09/01/2012 22:59   |
|               | Standard Methods 3030 E, 3113 B, Metals by GFAA             |                  |                  | 08/17/2012 17:35 | 08/20/2012 13:24   |
| 12080803-001D | Nat-East  | 08/16/2012 12:20 | 08/17/2012 11:47 |                  |                    |
|               | EPA 600 4.1.1, 200.7R4.4, Metals by ICP (Dissolved)         |                  |                  | 08/17/2012 13:26 | 09/04/2012 10:05   |
|               | Standard Methods 3030 B, 3113 B, Metals by GFAA (Dissolved) |                  |                  | 08/17/2012 12:58 | 08/21/2012 9:35    |
| 12080803-001E | Nat-East  | 08/16/2012 12:20 | 08/17/2012 11:47 |                  |                    |
|               | Standard Methods 5310 C, Organic Carbon                     |                  |                  |                  | 08/20/2012 23:07   |

Client: Barr Engineering Company

Work Order: 12080803

Client Project: National MTS-25/86-0003

Report Date: 04-Sep-12

**EPA 600 375.2 REV 2.0 1993 (TOTAL)**

 Batch R167131 SampType: MBLK Units mg/L  
 SampID: MBLK

| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
|----------|----|------|--------|-------|-------------|------|-----------|------------|---------------|
| Sulfate  | 10 |      | < 10   |       |             |      |           |            | 08/20/2012    |

 Batch R167131 SampType: LCS Units mg/L  
 SampID: LCS

| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
|----------|----|------|--------|-------|-------------|------|-----------|------------|---------------|
| Sulfate  | 10 |      | 19     | 20    | 0           | 96.8 | 90        | 110        | 08/20/2012    |

 Batch R167173 SampType: MBLK Units mg/L  
 SampID: MBLK

| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
|----------|----|------|--------|-------|-------------|------|-----------|------------|---------------|
| Sulfate  | 10 |      | < 10   |       |             |      |           |            | 08/21/2012    |

 Batch R167173 SampType: LCS Units mg/L  
 SampID: LCS

| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
|----------|----|------|--------|-------|-------------|------|-----------|------------|---------------|
| Sulfate  | 10 |      | 19     | 20    | 0           | 96.8 | 90        | 110        | 08/21/2012    |

 Batch R167173 SampType: MS Units mg/L  
 SampID: 12080803-001BMS

| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
|----------|----|------|--------|-------|-------------|------|-----------|------------|---------------|
| Sulfate  | 50 | S    | 250    | 50    | 225.2       | 48.6 | 90        | 110        | 08/21/2012    |

 Batch R167173 SampType: MSD Units mg/L  
 SampID: 12080803-001BMSD

| Analyses | RL | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | Date Analyzed |
|----------|----|------|--------|-------|-------------|------|-------------|------|---------------|
| Sulfate  | 50 | S    | 250    | 50    | 225.2       | 48.6 | 249.5       | 0.01 | 08/21/2012    |

**STANDARD METHOD 4500-H B, LABORATORY ANALYZED**

 Batch R167049 SampType: LCS Units  
 SampID: LCS-R167049

| Analyses | RL   | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
|----------|------|------|--------|-------|-------------|------|-----------|------------|---------------|
| Lab pH   | 1.00 |      | 6.98   | 7.00  | 0           | 99.7 | 99.1      | 100.8      | 08/17/2012    |

 Batch R167049 SampType: DUP Units  
 SampID: 12080803-001BDUP

| Analyses | RL   | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | Date Analyzed |
|----------|------|------|--------|-------|-------------|------|-------------|------|---------------|
| Lab pH   | 1.00 |      | 8.00   |       |             |      | 8.000       | 0.00 | 08/17/2012    |

Client: Barr Engineering Company

Work Order: 12080803

Client Project: National MTS-25/86-0003

Report Date: 04-Sep-12

**STANDARD METHODS 2340 C**

Batch R167060 SampType: MBLK Units mg/L

SampleID: MB-R167060

| Analyses                           | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
|------------------------------------|----|------|--------|-------|-------------|------|-----------|------------|---------------|
| Hardness, as ( CaCO <sub>3</sub> ) | 5  |      | < 5    |       |             |      |           |            | 08/17/2012    |

Batch R167060 SampType: LCS Units mg/L

SampleID: LCS-R167060

| Analyses                           | RL | Qual | Result | Spike | SPK Ref Val | %REC  | Low Limit | High Limit | Date Analyzed |
|------------------------------------|----|------|--------|-------|-------------|-------|-----------|------------|---------------|
| Hardness, as ( CaCO <sub>3</sub> ) | 5  |      | 1000   | 1000  | 0           | 100.0 | 90        | 110        | 08/17/2012    |

Batch R167060 SampType: MS Units mg/L

SampleID: 12080803-001BMS

| Analyses                           | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
|------------------------------------|----|------|--------|-------|-------------|------|-----------|------------|---------------|
| Hardness, as ( CaCO <sub>3</sub> ) | 5  |      | 860    | 400   | 480.0       | 95.0 | 85        | 115        | 08/17/2012    |

Batch R167060 SampType: MSD Units mg/L

SampleID: 12080803-001BMSD

RPD Limit 10

| Analyses                           | RL | Qual | Result | Spike | SPK Ref Val | %REC  | RPD Ref Val | %RPD | Date Analyzed |
|------------------------------------|----|------|--------|-------|-------------|-------|-------------|------|---------------|
| Hardness, as ( CaCO <sub>3</sub> ) | 5  |      | 880    | 400   | 480.0       | 100.0 | 860.0       | 2.30 | 08/17/2012    |

**STANDARD METHODS 2540 C (TOTAL)**

Batch R167104 SampType: MBLK Units mg/L

SampleID: MBLK

| Analyses               | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
|------------------------|----|------|--------|-------|-------------|------|-----------|------------|---------------|
| Total Dissolved Solids | 20 |      | < 20   |       |             |      |           |            | 08/17/2012    |
| Total Dissolved Solids | 20 |      | < 20   |       |             |      |           |            | 08/17/2012    |

Batch R167104 SampType: LCS Units mg/L

SampleID: LCS

| Analyses               | RL | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
|------------------------|----|------|--------|-------|-------------|------|-----------|------------|---------------|
| Total Dissolved Solids | 20 |      | 964    | 1000  | 0           | 96.4 | 90        | 110        | 08/17/2012    |
| Total Dissolved Solids | 20 |      | 968    | 1000  | 0           | 96.8 | 90        | 110        | 08/17/2012    |

Batch R167104 SampType: DUP Units mg/L

SampleID: 12080803-001B DUP

RPD Limit 15

| Analyses               | RL | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | Date Analyzed |
|------------------------|----|------|--------|-------|-------------|------|-------------|------|---------------|
| Total Dissolved Solids | 20 |      | 542    |       |             |      | 550.0       | 1.47 | 08/17/2012    |

**STANDARD METHODS 2540 D**

Batch R167077 SampType: MBLK Units mg/L

SampleID: MBLK

| Analyses               | RL   | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
|------------------------|------|------|--------|-------|-------------|------|-----------|------------|---------------|
| Total Suspended Solids | 6.00 |      | < 6.00 |       |             |      |           |            | 08/20/2012    |
| Total Suspended Solids | 6    |      | < 6    |       |             |      |           |            | 08/20/2012    |

Client: Barr Engineering Company

Work Order: 12080803

Client Project: National MTS-25/86-0003

Report Date: 04-Sep-12

**STANDARD METHODS 2540 D**

 Batch R167077 SampType: LCS Units mg/L  
 SampleID: LCS

| Analyses               | RL | Qual | Result | Spike | SPK Ref Val | %REC  | Low Limit | High Limit | Date Analyzed |
|------------------------|----|------|--------|-------|-------------|-------|-----------|------------|---------------|
| Total Suspended Solids | 6  |      | 107    | 100   | 0           | 107.0 | 85        | 115        | 08/20/2012    |
| Total Suspended Solids | 6  |      | 97     | 100   | 0           | 97.0  | 85        | 115        | 08/20/2012    |
| Total Suspended Solids | 6  |      | 87     | 100   | 0           | 87.0  | 85        | 115        | 08/20/2012    |
| Total Suspended Solids | 6  |      | 88     | 100   | 0           | 88.0  | 85        | 115        | 08/20/2012    |
| Total Suspended Solids | 6  |      | 94     | 100   | 0           | 94.0  | 85        | 115        | 08/20/2012    |

 Batch R167077 SampType: DUP Units mg/L  
 SampleID: 12080803-001B DUP

RPD Limit 15

| Analyses               | RL | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | Date Analyzed |
|------------------------|----|------|--------|-------|-------------|------|-------------|------|---------------|
| Total Suspended Solids | 6  |      | < 6    |       |             |      | 0           | 0.00 | 08/20/2012    |

**STANDARD METHODS 5310 C, ORGANIC CARBON**

 Batch R167121 SampType: MBLK Units mg/L  
 SampleID: ICB/MBLK

| Analyses                   | RL  | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
|----------------------------|-----|------|--------|-------|-------------|------|-----------|------------|---------------|
| Total Organic Carbon (TOC) | 1.0 |      | < 1.0  |       |             |      |           |            | 08/20/2012    |

 Batch R167121 SampType: LCS Units mg/L  
 SampleID: CCV/LCS

| Analyses                   | RL  | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
|----------------------------|-----|------|--------|-------|-------------|------|-----------|------------|---------------|
| Total Organic Carbon (TOC) | 5.0 |      | 48.0   | 48.2  | 0           | 99.6 | 90        | 110        | 08/20/2012    |

 Batch R167121 SampType: MS Units mg/L  
 SampleID: 12080803-001EMS

| Analyses                   | RL  | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
|----------------------------|-----|------|--------|-------|-------------|------|-----------|------------|---------------|
| Total Organic Carbon (TOC) | 1.0 |      | 5.4    | 5.0   | 0.8600      | 91.2 | 85        | 115        | 08/20/2012    |

 Batch R167121 SampType: MSD Units mg/L  
 SampleID: 12080803-001EMSD

RPD Limit 10

| Analyses                   | RL  | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | Date Analyzed |
|----------------------------|-----|------|--------|-------|-------------|------|-------------|------|---------------|
| Total Organic Carbon (TOC) | 1.0 |      | 5.4    | 5.0   | 0.8600      | 91.2 | 5.420       | 0.00 | 08/20/2012    |

**EPA 600 4.1.1, 200.7R4.4, METALS BY ICP (DISSOLVED)**

 Batch 80707 SampType: MBLK Units µg/L  
 SampleID: MB-80707

| Analyses | RL   | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
|----------|------|------|--------|-------|-------------|------|-----------|------------|---------------|
| Cadmium  | 2.00 |      | < 2.00 | 2.00  | 0           | 0    | -100      | 100        | 09/04/2012    |
| Zinc     | 10.0 |      | < 10.0 | 10.0  | 0           | 0    | -100      | 100        | 09/04/2012    |

Client: Barr Engineering Company

Work Order: 12080803

Client Project: National MTS-25/86-0003

Report Date: 04-Sep-12

**EPA 600 4.1.1, 200.7R4.4, METALS BY ICP (DISSOLVED)**

Batch 80707 SampType: LCS Units µg/L

SampleID: LCS-80707

| Analyses | RL   | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
|----------|------|------|--------|-------|-------------|------|-----------|------------|---------------|
| Cadmium  | 2.00 |      | 47.2   | 50.0  | 0           | 94.4 | 85        | 115        | 09/04/2012    |
| Zinc     | 10.0 |      | 490    | 500   | 0           | 98.1 | 85        | 115        | 09/04/2012    |

Batch 80707 SampType: MS Units µg/L

SampleID: 12080803-001DMS

| Analyses | RL   | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
|----------|------|------|--------|-------|-------------|------|-----------|------------|---------------|
| Cadmium  | 2.00 |      | 46.2   | 50.0  | 0           | 92.4 | 75        | 125        | 09/04/2012    |
| Zinc     | 10.0 |      | 506    | 500   | 24.4        | 96.4 | 75        | 125        | 09/04/2012    |

Batch 80707 SampType: MSD Units µg/L

RPD Limit 20

SampleID: 12080803-001DMSD

| Analyses | RL   | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | Date Analyzed |
|----------|------|------|--------|-------|-------------|------|-------------|------|---------------|
| Cadmium  | 2.00 |      | 46.4   | 50.0  | 0           | 92.8 | 46.2        | 0.43 | 09/04/2012    |
| Zinc     | 10.0 |      | 506    | 500   | 24.4        | 96.4 | 506.3       | 0.00 | 09/04/2012    |

**EPA 600 4.1.4, 200.7R4.4, METALS BY ICP (TOTAL)**

Batch 80712 SampType: MBLK Units µg/L

SampleID: MB-80712

| Analyses | RL   | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
|----------|------|------|--------|-------|-------------|------|-----------|------------|---------------|
| Cadmium  | 2.00 |      | < 2.00 | 2.00  | 0           | 0    | -100      | 100        | 09/01/2012    |
| Cadmium  | 2.00 |      | < 2.00 | 2.00  | 0           | 0    | -100      | 100        | 08/18/2012    |
| Zinc     | 10.0 |      | < 10.0 | 10.0  | 0           | 0    | -100      | 100        | 09/01/2012    |
| Zinc     | 10.0 |      | < 10.0 | 10.0  | 0           | 0    | -100      | 100        | 08/18/2012    |

Batch 80712 SampType: LCS Units µg/L

SampleID: LCS-80712

| Analyses | RL   | Qual | Result | Spike | SPK Ref Val | %REC  | Low Limit | High Limit | Date Analyzed |
|----------|------|------|--------|-------|-------------|-------|-----------|------------|---------------|
| Cadmium  | 2.00 |      | 50.4   | 50.0  | 0           | 100.8 | 85        | 115        | 08/18/2012    |
| Cadmium  | 2.00 |      | 50.3   | 50.0  | 0           | 100.6 | 85        | 115        | 09/01/2012    |
| Zinc     | 10.0 |      | 530    | 500   | 0           | 105.9 | 85        | 115        | 09/01/2012    |
| Zinc     | 10.0 |      | 526    | 500   | 0           | 105.3 | 85        | 115        | 08/18/2012    |

Batch 80712 SampType: MS Units µg/L

SampleID: 12080803-001CMS

| Analyses | RL   | Qual | Result | Spike | SPK Ref Val | %REC | Low Limit | High Limit | Date Analyzed |
|----------|------|------|--------|-------|-------------|------|-----------|------------|---------------|
| Cadmium  | 2.00 |      | 47.7   | 50.0  | 0           | 95.4 | 75        | 125        | 09/01/2012    |
| Zinc     | 10.0 |      | 525    | 500   | 26.1        | 99.8 | 75        | 125        | 09/01/2012    |

Batch 80712 SampType: MSD Units µg/L

RPD Limit 20

SampleID: 12080803-001CMSD

| Analyses | RL   | Qual | Result | Spike | SPK Ref Val | %REC | RPD Ref Val | %RPD | Date Analyzed |
|----------|------|------|--------|-------|-------------|------|-------------|------|---------------|
| Cadmium  | 2.00 |      | 46.9   | 50.0  | 0           | 93.8 | 47.7        | 1.69 | 09/01/2012    |
| Zinc     | 10.0 |      | 515    | 500   | 26.1        | 97.7 | 525.1       | 2.00 | 09/01/2012    |



## Quality Control Results

<http://www.teklabinco.com/>

Client: Barr Engineering Company

Work Order: 12080803

Client Project: National MTS-25/86-0003

Report Date: 04-Sep-12

**STANDARD METHODS 3030 E, 3113 B, METALS BY GFAA**

|                  |      |                |        |            |             |      |           |            |            |      |
|------------------|------|----------------|--------|------------|-------------|------|-----------|------------|------------|------|
| Batch 80718      |      | SampType: MBLK |        | Units µg/L |             |      |           |            |            |      |
| SampID: MB-80718 |      |                |        |            |             |      |           |            |            | Date |
| Analyses         | RL   | Qual           | Result | Spike      | SPK Ref Val | %REC | Low Limit | High Limit | Analyzed   |      |
| Lead             | 2.00 |                | < 2.00 | 2.00       | 0           | 0    | -100      | 100        | 08/20/2012 |      |

|                   |      |               |        |            |             |       |           |            |            |               |
|-------------------|------|---------------|--------|------------|-------------|-------|-----------|------------|------------|---------------|
| Batch 80718       |      | SampType: LCS |        | Units µg/L |             |       |           |            |            |               |
| SampID: LCS-80718 |      |               |        |            |             |       |           |            |            | Date Analyzed |
| Analyses          | RL   | Qual          | Result | Spike      | SPK Ref Val | %REC  | Low Limit | High Limit |            |               |
| Lead              | 2.00 |               | 15.3   | 15.0       | 0           | 102.1 | 85        | 115        | 08/20/2012 |               |

|                         |  |              |      |            |       |             |       |           |            |               |
|-------------------------|--|--------------|------|------------|-------|-------------|-------|-----------|------------|---------------|
| Batch 80718             |  | SampType: MS |      | Units µg/L |       |             |       |           |            |               |
| SampID: 12080803-001CMS |  |              |      |            |       |             |       |           |            | Date Analyzed |
| Analyses                |  | RL           | Qual | Result     | Spike | SPK Ref Val | %REC  | Low Limit | High Limit |               |
| Lead                    |  | 4.00         |      | 24.0       | 15.0  | 7.4101      | 110.6 | 70        | 130        | 08/20/2012    |

|                          |  |               |      |            |       |             |      |              |      |               |
|--------------------------|--|---------------|------|------------|-------|-------------|------|--------------|------|---------------|
| Batch 80718              |  | SampType: MSD |      | Units µg/L |       |             |      | RPD Limit 20 |      |               |
| SampID: 12080803-001CMSD |  |               |      |            |       |             |      |              |      | Date Analyzed |
| Analyses                 |  | RL            | Qual | Result     | Spike | SPK Ref Val | %REC | RPD Ref Val  | %RPD |               |
| Lead                     |  | 4.00          |      | 22.3       | 15.0  | 7.4101      | 99.3 | 24.0027      | 7.31 | 08/20/2012    |

**STANDARD METHODS 3030 B, 3113 B, METALS BY GFAA (DISSOLVED)**

|                  |      |                |        |            |             |      |           |            |            |               |
|------------------|------|----------------|--------|------------|-------------|------|-----------|------------|------------|---------------|
| Batch 80706      |      | SampType: MBLK |        | Units µg/L |             |      |           |            |            |               |
| SampID: MB-80706 |      |                |        |            |             |      |           |            |            | Date Analyzed |
| Analyses         | RL   | Qual           | Result | Spike      | SPK Ref Val | %REC | Low Limit | High Limit |            |               |
| Lead             | 2.00 |                | < 2.00 | 2.00       | 0           | 0    | -100      | 100        | 08/21/2012 |               |

|                   |      |               |        |            |             |      |           |            |            |      |
|-------------------|------|---------------|--------|------------|-------------|------|-----------|------------|------------|------|
| Batch 80706       |      | SampType: LCS |        | Units µg/L |             |      |           |            |            |      |
| SampID: LCS-80706 |      |               |        |            |             |      |           |            |            | Date |
| Analyses          | RL   | Qual          | Result | Spike      | SPK Ref Val | %REC | Low Limit | High Limit | Analyzed   |      |
| Lead              | 2.00 |               | 13.4   | 15.0       | 0           | 89.3 | 85        | 115        | 08/21/2012 |      |

|                         |      |              |        |            |             |      |           |            |            |               |
|-------------------------|------|--------------|--------|------------|-------------|------|-----------|------------|------------|---------------|
| Batch 80706             |      | SampType: MS |        | Units µg/L |             |      |           |            |            |               |
| SampID: 12080803-001DMS |      |              |        |            |             |      |           |            |            | Date Analyzed |
| Analyses                | RL   | Qual         | Result | Spike      | SPK Ref Val | %REC | Low Limit | High Limit |            |               |
| Lead                    | 4.00 |              | 18.3   | 15.0       | 5.7792      | 83.2 | 70        | 130        | 08/21/2012 |               |

|                          |  |               |      |            |       |             |      |              |      |               |
|--------------------------|--|---------------|------|------------|-------|-------------|------|--------------|------|---------------|
| Batch 80706              |  | SampType: MSD |      | Units µg/L |       |             |      | RPD Limit 20 |      |               |
| SampID: 12080803-001DMSD |  |               |      |            |       |             |      |              |      | Date Analyzed |
| Analyses                 |  | RL            | Qual | Result     | Spike | SPK Ref Val | %REC | RPD Ref Val  | %RPD |               |
| Lead                     |  | 4.00          |      | 18.2       | 15.0  | 5.7792      | 83.0 | 18.265       | 0.18 | 08/21/2012    |



## Receiving Check List

<http://www.teklabinc.com/>

Client: Barr Engineering Company

Work Order: 12080803

Client Project: National MTS-25/86-0003

Report Date: 04-Sep-12

Carrier: Ron Korte

Received By: JMH

Completed by:

On:

17-Aug-12

Timothy W. Mathis

Reviewed by:

On:

17-Aug-12

*Elizabeth A. Hurley*

Elizabeth A. Hurley

Pages to follow: Chain of custody

Extra pages included

|   |   |   |                                      |                                  |
|---|---|---|--------------------------------------|----------------------------------|
| Shipping container/cooler in good condition?            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>             | Not Present <input type="checkbox"/> | Temp °C 3.6                      |
| Type of thermal preservation?                           | None <input type="checkbox"/>           | Ice <input checked="" type="checkbox"/> | Blue Ice <input type="checkbox"/>    | Dry Ice <input type="checkbox"/> |
| Chain of custody present?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>             |                                      |                                  |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>             |                                      |                                  |
| Chain of custody agrees with sample labels?             | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>             |                                      |                                  |
| Samples in proper container/bottle?                     | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>             |                                      |                                  |
| Sample containers intact?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>             |                                      |                                  |
| Sufficient sample volume for indicated test?            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>             |                                      |                                  |
| All samples received within holding time?               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>             |                                      |                                  |
| Reported field parameters measured:                     | Field <input type="checkbox"/>          | Lab <input checked="" type="checkbox"/> | NA <input type="checkbox"/>          |                                  |
| Container/Temp Blank temperature in compliance?         | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>             |                                      |                                  |

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

|   |   |                             |   |
|---|---|-----------------------------|---|
| Water – at least one vial per sample has zero headspace?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | No VOA vials <input checked="" type="checkbox"/>      |
| Water - TOX containers have zero headspace?               | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | No TOX containers <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt?                       | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| NPDES/CWA TCN interferences checked/treated in the field? | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/>                |

Any No responses must be detailed below or on the COC.

Custody seal(s) intact on shipping container/cooler. RK/TWM 8/17/12





## Teklab Chain of Custody

Pg

5445 Horseshoe Lake Road ~ Collinsville, IL 62234 ~ Phone: (618)344-1004 ~ Fax: (618)344-1005

Barr Engineering Co.

Are the samples chilled? ☒ Yes ☐ No with: ☒ Ice ☐ Blue ice

1001 Diamond Ridge, Suite 1100

Cooler Temp 3.6 Sampler Chris Schulte

Jefferson City

MO

65109

National MTS - 25/86-0003

Comments

Invoice to Mark Nations. Results to Allison Olds and Mark N  
Matrix is surface water.  
Metals = Cd, Pb, Zn

Contact Allison Olds

eMail aolds@barr.com

Phone 573-638-5007 Requested Due Date Standard

Billi

CUSTODY: SEAL CONTACT UPON  
ARRIVAL COURTESY P/4 8/17/12

| Lab Use         | Sample ID | Sample Date/Time | Preservative | Matrix | pH      | T.S.S.                              | Total Dissolved Solids              | Sulfate                             | Settleable Solids                   | T.O.C.                              |                                     |
|-----------------|-----------|------------------|--------------|--------|---------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 12080803<br>CCI | Nat-East  | 8-16-12 12:27    | Unpres       | 5      | Aqueous | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|                 |           |                  | Unpres       |        | Aqueous | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
|                 |           |                  | Unpres       |        | Aqueous | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
|                 |           |                  | Unpres       |        | Aqueous | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
|                 |           |                  | Unpres       |        | Aqueous | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
|                 |           |                  | Unpres       |        | Aqueous | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
|                 |           |                  | Unpres       |        | Aqueous | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
|                 |           |                  | Unpres       |        | Aqueous | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
|                 |           |                  | Unpres       |        | Aqueous | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |

| Relinquished By *              | Date/Time     | Received By |
|--------------------------------|---------------|-------------|
| Steve Maitland / Chris Schulte | 8-16-12 13:00 | [Signature] |
| [Signature]                    | 8/17/12 11:47 | [Signature] |

\* The individual signing this agreement on behalf of client acknowledges that they have read and understand the terms of this agreement and that they have the authority to sign on behalf of the client.